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ABSTRACT

The Responsive Model Program uses the typing or learning booth as an important part of its autotelic (self-rewarding) environment, to help children develop the mental processes involved in discovery of relationships, such as the association of sound with symbols, or discovering the rules of a game. The typing booth also helps children to develop independence in problem-solving behavior and causes rapid language development. Child-control over initiation and termination of booth activities is emphasized. Language development phases reflecting typing booth achievement are described: (1) Free Exploration, (2) Search and Match, (3) Discrimination, (4) Typing Words and Stories, and (5) Classroom Related Activites. This paper reports the progress of 801 kindergarten and 300 first grade children, mostly from low-income homes, from 9 communities, during the first year (1968-69) of the program. Tables give data on booth achievement for both groups of children, and the number of months the booths were in operation (a gross index of how long children spend in the booths). In general, differences in booth achievement from district to district, and the apparent relationship between the length of time the booth was in operation and booth achievement, reinforce the importance of booth training for children in the Responsive Follow Through Model (NH)

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PRELIMINARY ANALYSIS OF 1968-69

BOOTH ACHIEVEMENT

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INTRODUCTION

Fourteen communities throughout the United States are cooperating with the Far West Laboratory for Educational Research and Development to develop a responsive model Follow Through program. A Follow Through program is designed to begin when Head Start ends (kindergarten or first grade) and to capitalize on the Head Start program by extending its positive effects at least through the third grade. In a responsive Follow Through program, a child is helped to form a positive self-image, improve the use of his senses and perceptions, enhance his understanding of language, and develop conceptual and problem-solving abilities.

To accomplish these ends we are developing an environment that responds to the child, rather than forcing the child to respond to the environment in a set pattern. The classroom environment is designed to be autotelic: A child does something because he likes it not because he gets rewards or avoids punishments that have no built-in connection with the activity itself. Since we have not included anything in the classroom that does not contribute to achieving our goals, a child is allowed to pursue any activity as long as and as frequently as he likes. In the classroom -- teachers, other children, games and machines -- provide immediate feedback and help the child discover his physical, social and cultural world. Most of the child's school day is spent in self-directed activities or in small groups. The teacher does hold large group activities such as singing, a planned lesson or listening to a story. The children, however, have the option of participating or not participating in these large group activities.

One important part of The Far West Laboratory's Autotelic Environment is a typing or learning booth. In each kindergarten (or first grades in school districts that do not have kindergarten) a booth assistant asks a child once each day if he would like to "play with the typewriter." If the child says "yes," the assistant takes him to a booth equipped with an electric typewriter and other related equipment. The child is allowed to play with the typewriter for as long as 10 minutes. The child begins in the booth by playing with the typewriter while the assistant answers his questions and names the symbols he strikes, such as "x, a, y, comma, space" and "return." The child will move from this first phase of just playing to finding and striking a letter that is shown to him. Eventually the child progresses to typing words that are important to him, then to typing stories he has composed.

Booth experience usually results in rapid language development. While we do not discount the importance of language development, the primary purpose of the booth is the mental process involved in discovering relationships - relationships such as the association of sound with symbols or discovering the rules of a new game. It is also important to help young children develop a mental attitude that encourages independence in problem-solving behavior, rather than dependence on others for directions to solutions.

TYPING BOOTH ACTIVITIES

The rules that guide the booth activities are:

1. Anytime a child asks to leave the booth, he may do so.
2. Anytime a child asks to play in an earlier phase, he may do so.
3. Anytime a child initiates conversation, the booth assistant responds but does not initiate conversation.
4. The booth assistant can only ask a child to type once a day. If he says "no," the assistant cannot ask again. If the child asks to type later on, he may do so.

Five phases of language development, reflecting typing booth achievement, have been identified:

Phase I - Free Exploration.

The child plays with the typewriter while the booth assistant tells him what he is doing and the typewriter shows him what he has done. As the child strikes letters and symbols, the assistant names them. If the child hits more than one key at a time, the typewriter is turned off by the assistant using an electric foot pedal switch. Therefore, the first thing the child discovers is that the typewriter works only when he strikes one key at a time. As far as the youngster is concerned, he is not learning the names of letters, numbers and punctuation marks. He is learning to associate abstract symbols and sounds. The child will indicate in one way or another when it's time to move to the next phase. Some children will name the letter or number before the booth assistant does. Others will start to lose interest and the time they want to spend in the booth will decrease.

Phase II - Search and Match.

The booth assistant displays a magnetic chalkboard with an overlay of a chart showing the typewriter keyboard. With the typewriter locked in upper case, the booth assistant selects a magnetized upper-case letter, saying the name of the letter as he places it on the chalk-board over the colored circle that corresponds to the color and placement of the letter on the typewriter. If the child asks what the chart is, the assistant says, "It is a picture of the typewriter and with it we can play a new game." If the child points to the letter, the assistant names the letter but lets the child discover what the new game is and what the rules are. The game, of course, is for him to find and strike the letter on the keyboard that matches the one on the chart. When he does, the typewriter works. After the child has found the first letter, the child chooses the next letter to be placed on the chart and the process repeats. When the child can match most of the letters or begins to lose interest in the game, it's time to move on to the second step in phase II.

In this step, the child sees one letter at a time on a 5 x 8 card. The rule is that the typewriter works only when he types that letter.

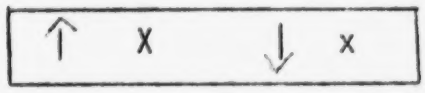
Phase III - Discrimination.

There are four steps in this phase. In the first step, a child sees two capital letters on a card and the booth assistant names one. The rule is that the typewriter works only when the child types the letter that was named.

During step 2 in phase III the child spends part of each booth session playing games at the chalkboard. The first game is based upon alphabet cards. The booth assistant writes the letters on the chalkboard as they appear on a set of cards with four upper case letters spaced across the top of the board and the same letter in lower case along the bottom, but in a different order from the top line. On the first set of 14 cards, three of the four letters have similar shapes for upper and lower case.

Using the first set of cards, the booth assistant will not know when the child can recognize the upper and lower cases of the same letter since the correct answer can be arrived at by eliminating the wrong ones. Consequently, going through the first set of cards the assistant uses another set. These seven cards have two letters with similar upper and lower case forms and two letters with dissimilar upper and lower forms. After the child makes the correct associations on the second set of cards, the assistant uses another set on which all the letters have different upper and lower case forms. During this step, the child is also freely exploring on the typewriter with small (lower-case) letters.

In step 3 phase III, the child must discover the shift key and make the association on the typewriter between capital (upper case) and small (lower case) letters. This is accomplished by having an arrow pointing towards the top (or back) of the typewriter on the key that locks the carriage to type only upper case and an arrow pointing down (or towards the front of the typewriter) on the shift key that releases the carriage so lower case letters are typed. On a card, the child sees:



The booth assistant shows him the card and says "capital" and waits for the child to hit the shift key (↑), then the assistant says "X" and waits for the child to hit the X; then the assistant says "small" and waits for the child to hit (↓), and so on. Once the child has discovered the new rules, he proceeds through a set of cards with all of the letters on them.

The 4th and last step of phase III is devoted to searching and matching for small letters only. This means the child sees "a" and finds "A" on the typewriter in order to be right.

Phase IV - Typing Words and Stories.

In step 1 of phase IV, the booth assistant asks the child if he would like to type a word. The child is asked what word he would like to type. This word is printed on a card, and the child types it using upper and lower case letters. The next day the assistant shows the word or words to the child and asks him to say them. When the child knows 15 to 20 words, he's ready to write a story. The youngster tells the story and the booth assistant prints it on a piece of paper. Next, the child types his own story, putting to use all he has learned. If, for example, he forgets to start a sentence with an upper case letter, the typewriter stops. But because he has had this experience before, he knows why it stopped and corrects his mistake.

Phase V - Classroom Related Activities.

The booth activities as they were tested during the 1968-69 school year and which are reported in this paper ended with phase IV. The major criticism made about the typing booths last year was that many children completed all phases before the end of the year. In phase V we have extended the activities in the booth. We will be testing phase V this year.

At step 1 of phase V the child is presented with Durrell-Murphy cards. One card might have a picture of a cat and the words pat, sat, cat. The rule is for the child to type the correct word "cat."

Step 2 is really a variation of writing a story. The child writes a note to a friend in the classroom and reads it to that friend.

Step 3 is word discrimination with phonograms. The child sees a card like this

bet	met	pet
bad	mad	pad
bill	mill	pill

One word is covered and the rule is for the child to type that word. He can discover what the word is if he notices that the beginnings are the same in each column and the endings are the same in each row.

The last step in phase V is for a child to bring a book to the booth. As the assistant reads the book, the child is given the chance to say the words he knows or recognizes.

ACHIEVEMENT IN THE TYPING BOOTH

The remainder of this paper reports the progress 801 kindergarten and 300 first grade children from 10 communities throughout the United States made in the typing booths during the first year (1968-69) of the program. Although 10 communities originally cooperated with the Laboratory the first year, booth data from one district was not available.

The majority of children in the remaining nine districts were from homes defined as "poor" by the Office of Economic Opportunity. Also, except for one district (district D where approximately half the children came from non-poor backgrounds), a majority of the children were living in low-income areas of cities.

After a child took a turn in the typing booth, the assistant recorded the phase at which the child performed. Data summarizing the end-of-year phases are in Figure I and Table I and II.

The figure is a graph that shows the percent of the children that reached phase IV and how much time the booth had been in operation in each community. The tables show the percent of children in each community that reached each phase. The following are statements about a child's achievement according to the phase he has reached:

Phase I - Free Exploration - If the child is in phase I we cannot make any statement about his achievement.

Phase II - Search and Match - If the child is in phase II we can say that the child:

a. has learned that the typewriter only works when he strikes one key at a time;

b. has discovered the purpose of the return key;

c. has also discovered the rules for the first new game (phase II); and

d. is able to find some of the letters when he is shown an example.

Phase III -Step 1 or 2 - Discrimination with Capital Letters - If the child is in phase III, Step 1 or 2, we can say that, in addition to the discoveries mentioned in phase II, he:

a. can match most of the letters; that is, when shown a letters he can find it on the typewriter and will strike it;

b. has discovered the rules for discrimination; and

c. can discriminate between some letters; that is, when shown two letters and the booth assistant names one of them, he can find that letter on the keyboard and strike it.

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Phase III - Step 3 or 4 - Discrimination with Small Letters - If the child is in phase III, step 3 or 4, in addition to phase III, steps 1 or 2, he:

a. can discriminate between a majority of the letters;

b. can solve a problem involving eliminating known responses to arrive at an unknown response;

c. can associate the capital and lower case forms of most letters;

d. has discovered how to use the shift key.

Phase IV - Typing Words and Stories - If the child is in phase IV we can say that in addition to phase III, steps 3 or 4, he:

a. can associate the capital and lower case forms of most letters;

b. is typing some words; and

c. may be typing his own stories.

DISCUSSION

Based on the data in Table I we can say that at the end of the school year, after six months (on the average) booth experience, 31% of all 801 kindergarten children achieved phase IV skills. That is, 294 children had discovered the rules for several games and were capable of typing some words. Forty-four percent (31% plus 13%) were capable of discriminating between letters and making correct associations between capital and small letters; 68% (31% plus 13% plus 24%) were capable of discriminating between letters (i.e., when shown two letters a child can type the one that is named for him); and 92% of the 801 children could match letters. Only 8% remained in phase I.

First grade performance in the typing booths were also encouraging (see Table II). Of 300 first grade Follow Through children, 50% performed at phase IV; 13% performed at phase III, steps 3-4 and 28% at phase III, steps 1-2.

From previous studies we know[1] that booth achievement is related to the time a child spends in the booth. Of course, this time will vary within a classroom because some children stay longer each time they go to type and some children do not always take their turn. It will also vary within a district because the ratio between the number of children per booth will enable some children to have more opportunities in the typing booth. Nevertheless, a gross index of how long children spend in the booth is how long the booth has been operating in a given district.

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1. Interim Report: Research of the New Nursery School, Glen Nimnicht, John Meier, Oralie McAfee, Colorado State College, Greeley, Colorado, December, 1967.

In those districts where the booths have been in operation longer, children demonstrate higher achievement. For example, as shown in Figure 1, in District G where the booth had been in operation eight months, 80% of the children are typing at phase IV. In booths that have been operating five months (Districts B and C), less than 6% of the children were at phase IV. In general, there is a clear relationship between the length of time the booth was in operation and booth achievement. The exception to this general trend was District A and we will be looking for other variables in that district.

We cannot attribute all booth achievement to the experience the children receive in the typing booths. Other related classroom activities undoubtedly make a contribution to a child's booth achievement. However, the differences in booth achievement from district to district coupled with the apparent relationships between the length of time the booth was in operation and booth achievement reinforce the importance of booth training for children in the Responsive Follow Through Model.

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TABLE I

PERCENT OF KINDERGARTEN CHILDREN PERFORMING AT
BOOTH ACHIEVEMENT PHASES DURING 1968-69

Community	N	*Mos.	PERCENT AT EACH PHASE				
			I	II	III(1-2)	III(3-4)	IV
G	40	8		3	8	10	80
F	137	7	2	4	10	18	65
E	197	6	7	15	32	5	42
D	86	6	2	12	38	30	17
C	164	5	21	37	18	18	6
B	112	5	7	69	24		
A	65	4	3	14	37	14	32
TOTAL	801						
AVERAGES		6	8	24	24	13	31

*Mos. = The number of months the booth was in operation

TABLE II

PERCENT OF FIRST GRADE CHILDREN PERFORMING AT
BOOTH ACHIEVEMENT PHASES DURING 1968-69

Community	N	*Mos.	PERCENT AT EACH PHASE				
			I	II	III(1-2)	III(3-4)	IV
J	170	6	3	7	32	14	44
K	130	6	4	2	23	13	58
TOTAL	300						
AVERAGES		6	3	5	28	13	50

*Mos. = The number of months the booth was in operation

PERCENT OF KINDERGARTEN CHILDREN PERFORMING
AT PHASE IV

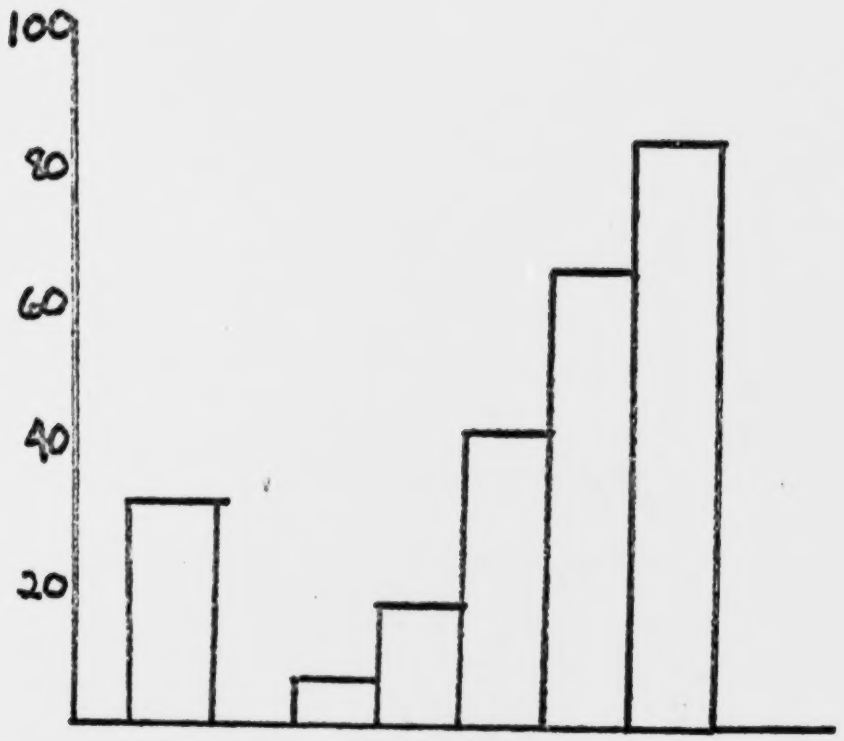

FIGURE I

MONTHS OF BOOTH OPERATION AND BOOTH PERFORMANCE